

Client's ref.: TSMC2003-0871;0783/PE:DCLin
Our ref.: 0503-A30076-USf/Yianhou/Steve/Nelson

What Is Claimed Is:

- 1 1. A system for capacity management, comprising:
2 a first capacity reserved for a first device design in a
3 first capacity management cycle;
4 a second capacity reserved for a second device design
5 having a pull-in demand in a second capacity
6 management cycle after the first capacity management
7 cycle; and
8 a processing unit to exchange the first capacity and the
9 second capacity, wherein the processing unit directs
10 the first capacity to meet the second device design
11 and the second capacity to meet the first device
12 design.
- 1 2. The system of claim 1 further comprising a production
2 line to manufacture the second device design using the first
3 capacity after the first capacity management cycle.

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1 3. The system of claim 2 wherein the production line
2 further manufactures the first device design using the second
3 capacity after the second capacity management cycle.

1 4. The system of claim 1 wherein the processing unit
2 further checks whether the first capacity reserved for the first
3 device design is sufficient for the second capacity reserved for
4 the second device design.

1 5. The system of claim 1 further comprising a reservation
2 unit for reserving capacity in the first and second capacity
3 management cycles.

1 6. The system of claim 5 wherein the first capacity is
2 reserved by a first client and the second capacity is reserved
3 by a second client.

1 7. A method for capacity management, comprising the
2 steps of:

3 exchanging a first capacity reserved for a first device
4 design in a first capacity management cycle with a
5 second capacity reserved for a second device design

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6 in a second capacity management cycle after the first
7 capacity management cycle, in which the second device
8 design has a pull-in demand;
9 such that the first capacity meets the second device
10 design and the second capacity meets the first device
11 design.

1 8. The method of claim 7 further comprising
2 manufacturing the second device design using the first capacity
3 after the first capacity management cycle.

1 9. The method of claim 8 further comprising
2 manufacturing the first device design using the second capacity
3 after the second capacity management cycle.

1 10. The method of claim 7 further comprising checking
2 whether the first capacity reserved for the first device design
3 is sufficient for the second capacity reserved for the second
4 device design.

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1 11. The method of claim 7 further comprising reserving
2 capacity in the first and second capacity management cycles for
3 the first and second device designs respectively.

1 12. The method of claim 11 wherein the first capacity is
2 reserved by a first client and the second capacity is reserved
3 by a second client.

1 13. A machine-readable storage medium storing a computer
2 program which when executed causes a computer to perform a method
3 for capacity management, the method comprising the steps of:

4 exchanging a first capacity reserved for a first device
5 design in a first capacity management cycle with a
6 second capacity reserved for a second device design
7 in a second capacity management cycle after the first
8 capacity management cycle, in which the second device
9 design has a pull-in demand,

10 such that the first capacity meets the second device
11 design and the second capacity meets the first device
12 design.

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1 14. The storage medium of claim 13 wherein the method
2 further comprises a step of manufacturing the second device
3 design using the first capacity after the first capacity
4 management cycle.

1 15. The storage medium of claim 14 wherein the method
2 further comprises a step of manufacturing the first device
3 design using the second capacity after the second capacity
4 management cycle.

1 16. The storage medium of claim 13 wherein the method
2 further comprises a step of checking whether the first capacity
3 reserved for the first device design is sufficient for the second
4 capacity reserved for the second device design.

1 17. The storage medium of claim 13 wherein the method
2 further comprises a step of reserving capacity in the first and
3 second capacity management cycles for the first and second
4 device designs respectively.

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1 18. The storage medium of claim 17 wherein the first
2 capacity is reserved by a first client and the second capacity
3 is reserved by a second client.

1 19. A capacity trading system, comprising:
2 a user interface to receive a capacity release request and
3 a pull-in demand, in which the capacity release
4 request comprises a first capacity reserved in a
5 first capacity management cycle;
6 a processing unit coupled to the user interface to receive
7 the capacity release request and the pull-in demand,
8 and release the first capacity to meet the pull-in
9 demand; and
10 an accounting unit to generate a bill for the pull-in
11 demand.

1 20. The system of claim 19 further comprising a production
2 line to manufacture products for the pull-in demand using the
3 first capacity after the first capacity management cycle.

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1 21. The system of claim 19 wherein the processing unit
2 further checks whether the first capacity is sufficient for the
3 pull-in demand.

1 22. The system of claim 19 further comprising a
2 reservation unit to reserve a second capacity for a device design
3 corresponding to the first capacity in a second capacity
4 management cycle behind the first capacity management cycle when
5 the first capacity is released.

1 23. The system of claim 22 further comprising a production
2 line to manufacture products for the device design using the
3 second capacity after the second capacity management cycle.

1 24. The system of claim 19 wherein the capacity release
2 request is received from a first client and the pull-in demand
3 is received from a second client via a network, in which
4 information of the first and second clients is kept confidential
5 by the capacity trading system.

1 25. The system of claim 24 wherein the accounting unit
2 further transmits the bill to the second client.

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1 26. The system of claim 24 wherein the accounting unit
2 further calculates a discount for the products of the first
3 client.

1 27. The system of claim 24 wherein the processing unit
2 further transmits a notification to the first client, in which
3 the notification comprises cycle time of the second capacity
4 management cycle and completion date for the products of the
5 first client.

1 28. The system of claim 24 wherein the processing unit
2 further defines a capacity push-out ratio for the first client,
3 and the first capacity follows accordingly.

1 29. The system of claim 22 wherein the second capacity is
2 originally reserved for the pull-in demand.

1 30. A capacity trading method, comprising the steps of:
2 receiving a capacity release request, in which the capacity
3 release request comprises a first capacity reserved
4 in a first capacity management cycle;
5 receiving a pull-in demand;

6 releasing the first capacity to meet the pull-in demand;
7 and
8 generating a bill for the pull-in demand.

1 31. The method of claim 30 further comprising
2 manufacturing products for the pull-in demand using the first
3 capacity after the first capacity management cycle.

1 32. The method of claim 30 further comprising checking
2 whether the first capacity is sufficient for the pull-in demand.

1 33. The method of claim 30 further comprising reserving
2 a second capacity for a device design corresponding to the first
3 capacity in a second capacity management cycle after the first
4 capacity management cycle when the first capacity is released.

1 34. The method of claim 33 further comprising
2 manufacturing products for the device design using the second
3 capacity after the second capacity management cycle.

1 35. The method of claim 30 wherein the capacity release
2 request is received from a first client and the pull-in demand
3 is received from a second client via a network, in which

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4 information of the first and second clients is kept
5 confidential.

1 36. The method of claim 35 further comprising
2 transmitting the bill to the second client.

1 37. The method of claim 35 further comprising calculating
2 a discount for the products of the first client.

1 38. The method of claim 35 further comprising
2 transmitting a notification to the first client, in which the
3 notification comprises cycle time of the second capacity
4 management cycle and completion date for the products of the
5 first client.

1 39. The method of claim 35 further comprising defining a
2 capacity push-out ratio for the first client, and the first
3 capacity follows accordingly.

1 40. The method of claim 33 wherein the second capacity is
2 originally reserved for the pull-in demand.

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1 41. A machine-readable storage medium storing a computer
2 program which when executed causes a computer to perform a
3 capacity trading method, the method comprising the steps of:
4 receiving a capacity release request and a pull-in demand,
5 in which the capacity release request comprises a
6 first capacity reserved in a first capacity
7 management cycle;
8 releasing the first capacity to meet the pull-in demand;
9 and
10 generating a bill for the pull-in demand.

1 42. The storage medium of claim 41 wherein the method
2 further comprises a step of manufacturing products for the
3 pull-in demand using the first capacity after the first capacity
4 management cycle.

1 43. The storage medium of claim 41 wherein the method
2 further comprises a step of checking whether the first capacity
3 is sufficient for the pull-in demand.

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1 44. The storage medium of claim 41 wherein the method
2 further comprises a step of reserving a second capacity for a
3 device design corresponding to the first capacity in a second
4 capacity management cycle behind the first capacity management
5 cycle when the first capacity is released.

1 45. The storage medium of claim 44 wherein the method
2 further comprises a step of manufacturing products for the
3 device design using the second capacity after the second
4 capacity management cycle.

1 46. The storage medium of claim 41 wherein the capacity
2 release request is received from a first client and the pull-in
3 demand is received from a second client via a network, in which
4 information of the first and second clients is kept
5 confidential.

1 47. The storage medium of claim 46 wherein the method
2 further comprises a step of transmitting the bill to the second
3 client.

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1 48. The storage medium of claim 46 wherein the method
2 further comprises a step of calculating a discount for the
3 products of the first client.

1 49. The storage medium of claim 46 wherein the method
2 further comprises a step of transmitting a notification to the
3 first client, in which the notification comprises cycle time of
4 the second capacity management cycle and completion date for the
5 products of the first client.

1 50. The storage medium of claim 46 wherein the method
2 further comprises a step of defining a capacity push-out ratio
3 for the first client, and the first capacity follows
4 accordingly.

1 51. The storage medium of claim 44 wherein the second
2 capacity is originally reserved for the pull-in demand.

1 52. A method for capacity management, comprising the
2 steps of:

3 receiving a capacity release request, in which the capacity
4 release request comprises a first capacity reserved
5 in a first capacity management cycle;
6 receiving a pull-in demand; and
7 releasing the first capacity to meet the pull-in demand.

1 53. The method of claim 52 further comprising checking
2 whether the first capacity is sufficient for the pull-in demand.

1 54. The method of claim 52 further comprising reserving
2 a second capacity for a device design corresponding to the first
3 capacity in a second capacity management cycle behind the first
4 capacity management cycle when the first capacity is released.

1 55. A machine-readable storage medium storing a computer
2 program which when executed causes a computer to perform a
3 capacity management method, the method comprising the steps of:

4 receiving a capacity release request, in which the capacity
5 release request comprises a first capacity reserved
6 in a first capacity management cycle;
7 receiving a pull-in demand; and
8 releasing the first capacity to meet the pull-in demand.

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1 56. The storage medium of claim 55 wherein the method
2 further comprises a step of checking whether the first capacity
3 is sufficient for the pull-in demand.

1 57. The storage medium of claim 55 wherein the method
2 further comprises a step of reserving a second capacity for a
3 device design corresponding to the first capacity in a second
4 capacity management cycle behind the first capacity management
5 cycle when the first capacity is released.